AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A cell search method for use in a mobile communication system, the method comprising the steps of:

performing one or more identification steps for identifying timing and codes of oversampled input signals; and

reducing resolution of the oversampled input signals before performing the one or more identification steps,

wherein the step of reducing resolution of the oversampled input signals includes sample-combining and down-sampling the oversampled input signals.

2. (canceled)

3. (currently amended) The cell search method ~~according claim 1~~ for use in a mobile communication system, the method comprising the steps of:

performing plural identification steps for identifying timing and codes of oversampled input signals; and

reducing resolution of the oversampled input signals before performing the plural identification steps,

wherein the ~~one or more~~ plural identification steps each produce an output in a form of reference timing output

signals, the method further comprising the step of converting the reference timing output signals back to an un-reduced resolution when each identification step is complete.

4. (original) The cell search method according to claim 3, wherein the step of reducing resolution of the oversampled input signals includes at least one of sample-combining and down-sampling the oversampled input signals.

5. (original) The cell search method according to claim 3, the method further comprising the steps of:

in each identification step, correlating the reduced resolution input signal with a code;

calculating power of the correlated signal;

accumulating power results;

storing the accumulated power results; and

searching for a maximum accumulated power result.

6. (original) The cell search method according to claim 5, wherein the step of reducing resolution of the oversampled input signals includes at least one of sample-combining and down-sampling the oversampled input signals.

7. (original) The cell search method according to claim 5, the method further comprising the step of comparing the maximum accumulated power result with a threshold.

8. (original) The cell search method according to claim 7, the method further comprising the step of converting the

reference timing output signal back to an un-reduced resolution when the threshold is exceeded.

9. (original) The cell search method according to claim 8, wherein the step of reducing resolution of the oversampled input signals includes at least one of sample-combining and down-sampling the oversampled input signals.

10. (original) The cell search method according claim 1, wherein the one or more identification steps includes a slot timing identification step.

11. (original) The cell search method according to claim 1, wherein the one or more identification steps includes frame timing and code group identification step.

12. (original) The cell search method according to claim 1, wherein the one or more identification steps includes a scrambling code identification step.

13. (currently amended) An apparatus for implementing a cell search in a mobile communication system, comprising:

identification means for identifying timing and codes from plural oversampled input signals; [[and]]

resolution reduction means for reducing resolution of the plural oversampled input signals; and

conversion means for converting reference timing output signals from the identification means back to original resolution of the plural oversampled input signals.

14. (canceled)

15. (original) The apparatus according to claim 14, wherein the identification means comprises:

a slot timing identifier;

a frame timing code and group number identifier, and

a scrambling code identifier.

16. (original) The apparatus according to claim 15, wherein the resolution reduction means comprises at least one of a sample-combiner and down-sampler for operation with each of the identifiers.

17. (original) The apparatus according to claim 16, wherein the at least one of a sample-combiner and down-sampler is operable at a different sub-sampling rate for each identifier.

18. (currently amended) The apparatus according to claim 15, wherein ~~each~~ said resolution reduction means comprises at least one of a sample-combiner and down-sampler.

19. (original) The apparatus according to claim 15, wherein each identifier comprises:

a matching or correlating unit for despreading the oversampled input signals,

a code generator;

a power profile creator; and

a detector.

20. (original) The apparatus according to claim 19, wherein the matching or correlating unit comprises a matched filter.

21. (original) The apparatus according to claim 19, wherein the matching or correlating unit comprises a bank of correlators.

22. (original) The apparatus according to claims 19, wherein the power profile creator comprises:

a power calculator for obtaining the power of a correlated signal;

an accumulator for accumulating current power results and previous result; and

a memory for storing the accumulated power results.

23. (original) The apparatus according to claim 19, wherein the detector is arranged to search for a maximum value among the accumulated power results.

24. (original) The apparatus according to claim 19, wherein the detector comprises a decision unit for comparing the detected maximum against a threshold.

25. (original) The apparatus according to claim 24, wherein the conversion means is arranged to convert the reference timing output signal back to an un-reduced resolution when the threshold is exceeded.